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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,243	02/05/2001	Yoram Kapulnik	01/21632	2822

7590 06/21/2002

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EXAMINER

FOX, DAVID T

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 06/21/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/762,243

Applicant(s)

Kapulnik et al

Examiner

FOX

Group Art Unit

1638

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE -1- MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-53 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☐ Claim(s) _____ is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☒ Claim(s) 1-53 are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____.
 - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____.

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

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The application should be reviewed for errors. Errors appear, for example, in claim 7, which depends upon claim 16. It appears that the claim was intended to depend upon claim 6. Furthermore, both claims 6 and 16 are drawn to methods rather than transgenic plants, as currently recited in claim 7.

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-2, 4-9, 13-14, 18-24, 28-34, 38 and 50, drawn to a method of degenerating somatic tissue via expression of a biotin-binding protein in the cytoplasm, the DNA construct utilized in the method, and the resultant transformed plants.

Group II, claim(s) 3, 15 and 39-46, drawn to a method of reversing somatic tissue degeneration via expression of antisense RNA or ribozymes.

Group III, claim(s) 10, 25 and 35, drawn to a method for degenerating somatic tissue via organelle transformation with a gene encoding a biotin-binding protein, and the resultant plants.

Group IV, claim(s) 11, 26, 36 and 51, drawn to a method for degenerating somatic tissue via expression of a biotin-binding protein ligated to a DNA-containing organelle signal sequence, and the resultant plants.

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Group V, claim(s) 12, 27, 37 and 52, drawn to a method for degenerating somatic tissue via targeting a biotin-binding protein to the endoplasmic reticulum, and the resultant plants.

Group VI, claim(s) 16, drawn to a method of reversing somatic degradation via the expression of an antagonist protein.

Group VII, claim(s) 17, drawn to a method of reversing somatic degradation via the topical application of biotin.

Group VIII, claim(s) 47, drawn to a method of reversing somatic degradation caused by the transformation of an organelle.

Group IX, claim(s) 48, drawn to a method of reversing somatic degradation caused by the expression of a gene encoding a biotin-binding protein ligated to a signal sequence which transports that protein to a DNA-containing organelle.

Group X, claim(s) 49, drawn to a method of reversing somatic degradation caused by the expression of a biotin-binding protein ligated to an endoplasmic reticulum signal sequence.

Group XI, claim(s) 53, drawn to a method for degenerating somatic tissue comprising expression of a construct comprising a bacterial signal sequence and a plant signal sequence.

The inventions listed as Groups I-XI do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The inventions are linked by the technical features of the expression of a biotin-binding protein in somatic tissues of plants, and optionally the reversal of the effects of the expression of

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that gene. However, these features are not special because they do not constitute an advance over the prior art, as evidenced by two references cited in the Search Report of the PCT application. Baszcynski et al (U.S. Patent 5,767,379) teach plant transformation with a gene encoding the biotin-binding protein avidin under the control of the constitutive CaMV 35S or ubiquitin promoters, which inherently express the avidin gene in somatic tissues (see, e.g., column 5, lines 17-29 and 59-67; column 6, lines 1-17; column 11, lines 1-36). WO 96/40949 (PIONEER HI-BRED) teaches the reversal of avidin gene expression via biotin sprays or the expression of genes encoding antisense RNA or ribozymes (see, e.g., page 21, lines 11-38; page 23, lines 14-24).

Inventions I-XI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of operation and different effects. Groups I-XI are drawn to eleven processes, each involving divergent starting materials and divergent effects not required by the other. The inventions of Groups I, III-V, and XI require methods and DNA constructs which result in the final product of degenerated somatic tissues, not required by the other groups. The inventions of Groups II and VI-X require methods and DNA constructs or chemicals for the reversal of somatic degradation, not required by the other groups. The inventions of Groups I and VI-VII require cytoplasmic expression of a biotin-binding protein, not required by the other groups. The invention of Group II requires the expression of genes encoding antisense RNA or

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ribozymes, not required by the other groups. The inventions of Groups III and VII require methods and constructs for organelle transformation not required by the other groups. The inventions of Groups IV and IX require signal sequences capable of transport to DNA-containing organelles, not required by the other groups. The inventions of Groups V and X require signal sequences capable of transport to the endoplasmic reticulum, not required by the other groups. The invention of Group VII requires topical biotin sprays, not required by the other groups. The invention of Group XI requires a bacterial signal sequence, not required by the other groups.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter and fields of search, restriction for examination purposes as indicated is proper.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David T. Fox whose telephone number is (703) 308-0280. The examiner can normally be reached on Monday through Friday from 10:30AM to 7:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached on (703) 306-3218. The fax phone number for this Group is (703) 872-9306. The after final fax phone number is (703) 872-9307.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

June 18, 2002

DAVID T. FOX
PRIMARY EXAMINER
GROUP 180-1638

A handwritten signature in black ink, appearing to read "David T. Fox", written over the printed name and group number.